

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)	Examiner: Matthew A. Bradley
James A. Williams <i>et al.</i>	)	
	)	Art Unit: 2187
Serial No.: 10/681,618	)	
	)	Confirmation No. 7286
Filed: October 8, 2003	)	
	)	
For: Access Controller for	)	
Storage Devices	)	
	)	
Notification Date of Final Office Action	)	
January 26, 2010	)	Attorney Docket No.:
	)	2003-091-01
Notice of Appeal Filed:	)	
April 26, 2010	)	

August 18, 2010

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is timely provided to support the Notice of Appeal filed April 26, 2010 and within one month from the Notice of Panel Decision from Pre-Appeal Brief Review (mailed July 22, 2010).

1. Real Party in Interest:

The real party in interest is Oracle International Corporation, a California Corporation with a place of business at 500 Oracle Parkway, Redwood Shores, California, 94065.

2. Related Appeals and Interferences

There are no other prior and/or pending appeals, interferences, or judicial proceedings that are related to, directly affect, or that will be directly affected by or have a bearing on the Board's decision.

3. Status of Claims

Pending Claims: 1-12, 14-19, 25-38

Rejected Claims: 1-12, 14-19, 25-38

Canceled Claims: 13, 20-24

Allowed Claims: None

Withdrawn Claims: None

Rejections Appealed for Claims: 1-12, 14-19, 25-38

4. Status of Amendments

No Amendments were filed subsequent to the Final Office Action.

5. Summary of Claimed Subject Matter

Independent Claim 1

Claim 1 recites a system for a storage device comprising an access controller (specification, page 6, lines 15-16, [0025], Figure 1, controller 120). The access controller is configured to control access requests to a storage device by metering access to data within a first predefined region within the storage device and by allowing unmetered access to data within a second predefined region within the storage device (specification, page 6, lines 16-24; see Figure 1, hot region 105 and cold region 110).

Dependent Claim 7

Claim 7 depends from claim 6, which depends from claim 1. Claim 7 recites that the first region and the second are defined by one or more logical block addresses (specification, page 7, lines 7-8; paragraph [0026]; page 9, lines 14-16; paragraph [0033]).

Independent Claim 14

Claim 14 recites a method comprising receiving access requests to a storage device (Figure 6, block 605; specification page 12, lines 4-7) and increasing response time for access requests to a first predefined region within the storage device by metering access requests to a second predefined region within the storage device (Figure 6, block 610; specification page 12, lines 7-9). The metering includes limiting a number of access requests to the second region based in part on a threshold number of the access requests to the second region (specification page 8, lines 7-10; page 10 paragraph [0036]; page 11, lines 21-31; Fig. 5; page 12, lines 10-17).

Dependent Claim 17

Claim 17 depends from claim 14 and recites that the method further includes defining a plurality of regions within the storage device (specification page 10, lines 1-4) and assigning a metering threshold for selected regions of the plurality of regions (specification page 10, lines 9-12).

Independent Claim 25

Claim 25 is directed to a computer-readable medium storing processor executable instructions operable to perform a method (specification, page 2, lines 21-22). The method comprises processing access requests to a storage device (specification page 12, lines 4-9) and controlling the access requests to the storage device by metering access to data within a first predefined region within the storage device and by allowing unmetered access to data within a second predefined region within the storage device (specification, page 6, lines 16-24).

Independent Claim 28

Claim 28 is directed to a computer-readable medium storing processor executable instructions operable to perform a method (specification, page 2, lines 21-22). The method comprises processing access requests to a storage device (specification page 12, lines 4-9). The method meters access requests to a first predefined region within the storage device to maintain response time for access requests to a second predefined region within the storage device (specification page 12, lines 7-12). Claim 28 further recites setting a threshold value of access requests, where access requests to the first region are caused to be metered after the threshold value of access requests are processed (specification page 8, lines

7-10; page 10 paragraph [0036]; page 11, lines 21-31; Fig. 5; page 12, lines 10-17).

Independent Claim 35

Claim 35 recites database system configured to process access requests to a storage device (specification page 9, lines 19-25, Figure 4, system 400). The system comprises allocation logic configured to define a plurality of regions within the storage device based on information received from a user (specification page 9, line 30 to page 10, line 3, Figure 4, allocation logic 420). Claim 35 also recites a threshold logic configured to assign a metering threshold to one or more selected regions of the plurality of regions (specification page 10, lines 9-15, Figure 4, threshold logic 425). The system also includes an access controller configured to process access requests to the storage device, the access controller including logic configured to meter access requests to a selected region of the plurality of regions once a metering threshold for the selected region is met (specification page 9, lines 26-29 and page 10, lines 12-15; Figure 4, access controller 415).

Independent Claim 38

Claim 38 is directed to a computer implemented method that recites receiving access requests to a storage device (Figure 6, block 605; specification page 12, lines 4-7). Claim 38 recites increasing response time for access requests to a first predefined region within the storage device by providing unmetered access to the first predefined region while metering access requests to a second predefined region within the storage device (specification, page 6, lines 16-24; see Figure 1, hot region 105 and cold region 110).

6. Grounds of Rejection to be Reviewed on Appeal

I. Whether claims 1-5, 8-12, 25-27, 29-34, and 38 are unpatentable under 35 U.S.C. 102(b) as being anticipated by Christenson et al (US 6,324,620).

II. Whether claims 6-7 are unpatentable under 35 USC §103(a) as being anticipated over Christenson and in view of Cousins (US 6,671,772).

III. Whether claims 14-19, 28, and 35-37 are unpatentable under 35 USC §103(a) as being anticipated over Christenson and in view of Johnson (US 2002/0138670).

7. Argument

I. Whether claims 1-5, 8-12, 25-27, 29-34, and 38 are unpatentable under 35 U.S.C. 102(b) as being anticipated by Christenson et al (US 6,324,620).

This rejection applies to independent claims 1, 25 and 38. Independent claim 1 is representative and will be discussed.

Independent Claim 1

The rejection is improper because each and every claimed element has not been found as required by MPEP 2131 and 35 USC 102. The examiner relies on Christenson, which discusses processing jobs based on the priority of the job. However, claim 1 recites controlling requests based on regions within a storage device, not job priority.

In particular, claim 1 recites controlling access requests “by metering access to data within a first predefined region within the storage device and by allowing unmetered access to data within a second predefined region.” Thus, what is metered and unmetered is dependent upon which of the predefined regions within the storage device are being accessed, not the job priority. This is a clear error in fact. A prima facie rejection has not been established and the rejection should be reversed.

The controller of Christenson is not configured to allow metered access to one region and unmetered access to another region. Such a feature is not taught or suggested by Christenson. In the Final Office Action (Final OA), the examiner relies on col. 12, lines 15-32 of Christenson (Final OA, page 13) as allegedly teaching these features. The cited text states:

Prioritizing Requests

In addition to the DASD partitioning discussed above, requests for the data are dependent upon the priority of the job or task of the overall application in accordance with another aspect of the present invention. To that end, at execution of a particular program or application, jobs or tasks associated with the application are designated as high priority or low priority. Requests for HOT data from high priority jobs are handled first. Next, requests for COLD for a high priority job is handled. Not until all the data for the high priority job has been accessed will a request for HOT data for a low priority job be handled. Finally, the request for COLD data from a low priority job is handled. In that way, the priority of the job will dictate the data access and the designation of the requested data as HOT or COLD will also affect the prioritization of data access.

(col. 12, lines 15-32) (Emphasis added)

Hence, Christenson discusses the following process and order:

1. Requests for data are dependent on the priority of the job (not a region within the storage device).
2. First, process high priority jobs for HOT data (regardless of region).
Note that low priority jobs for HOT data are simultaneously being blocked until step 4 below.
3. Next, process high priority jobs for COLD data (regardless of region).
4. When all high priority jobs are processed, then return to the HOT data and process a low priority job for HOT data.
5. Lastly, low priority jobs that access COLD data are processed.

The disclosed process fails to teach or suggest "unmetered access to data within a second predefined region within the storage device" as claimed. HOT data in Christenson is not given unmetered access because access to HOT data from a low priority job is simultaneously being delayed in favor of access to COLD data from a high priority job. A particular "region" is not involved or considered in the decision process of Christenson. COLD data is also not specifically metered or

given unmetered access. Christenson flip-flops between accessing HOT data and COLD data based on job priority, not based on predefined regions within the storage device. Therefore, no predefined region in Christenson is given unmetered access as claimed and no predefined region is given metered access. The claimed elements have not been found. The examiner has made a clear error and a prima facie anticipation rejection has not been established.

Priority

The examiner points to paragraph [0025] from the present specification as an interpretation that metering means giving priority as found in Christenson (Final OA, bottom of page 2 to top of page 3). The examiner is incorrect. Paragraph [0025] states, for example, "giving priority to hot access requests..." The last sentence of specification [0024] states that "access requests directed to the hot region will be referred to as hot access requests..." (spec, page 6, lines 13-14). This is not inconsistent with the claim language. Priority, in one embodiment, is thus dependent upon which disk region the request is accessing. Thus metering or not is still dependent upon which region the request is accessing. As explained above, Christenson does not give priority based on the disk region being accessed and fails to anticipate the claim even using the examiner's incorrect interpretation.

Additional Errors

The examiner attempts to read Christenson onto the claim language by (1) ignoring the entire teachings of Christenson and, (2) by misinterpreting the teachings. The error in (1) is that the examiner views only one small portion of Christenson, namely, the sentence that reads, "access to HOT data is given first over access to COLD data" (Final OA, page 13, 2nd and 3rd paragraphs, citing Christenson col. 12, lines 23-24). The examiner's interpretation ignores the subsequent eight lines of Christenson and clearly ignores the fact that other requests for HOT data (from low priority jobs) are simultaneously being delayed in order to process accesses to COLD data from high priority jobs (col. 12, lines 25-

32). Therefore, Christenson does not teach giving the HOT data unmetered access as the examiner alleges. The examiner has failed to consider the reference “as a whole” in violation of MPEP 2141.02 and has erred in interpreting the evidence. As such, the rejection is improper.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

(MPEP 2141.02, section VI, 1st sentence)

Definition Error: Data is defined by frequency of access, not by region

The error in (2) is that the examiner’s interpretation is incorrect. The examiner assumes that in Christenson, “HOT data” is defined as data that is in a “HOT partition.” This interpretation is explicitly contradicted by Christenson. Christenson explicitly does not define “HOT data” as data stored in a specific region in a disk (e.g. “HOT partition”) but rather is defined by the frequency of access of the data:

To that end, the data stored on the DASD units must be identified as either HOT data, COLD data, or neither. As will be appreciated, not all data will be HOT or COLD. HOT data will be considered data that is accessed more frequently than the average data, whereas COLD data will be considered to be data which is accessed less frequently with respect to the average data on a DASD unit.

(Christenson, col. 7, lines 11-19) (Emphasis added)

Therefore, data is not defined as “HOT” because it is in a HOT region or partition. Data is hot or cold based on its access frequency.

Further contradicting the examiner's interpretation, Christensen explicitly states that HOT data is at times stored in a COLD partition: "...HOT data which is found in the COLD partition..." (col. 10, lines 64-65). Likewise, COLD data is at times stored in a HOT partition: "...COLD data which is in a HOT partition is moved..." (col. 11, lines 10-11). Thus, the examiner's interpretation of Christenson is incorrect and creates a clear error in fact. The examiner's rationale is thus based on a clear error in fact and does not establish a prima facie anticipation rejection. Each and every element of claim 1 has not been found and the rejection should be reversed.

Furthermore, Christenson is directed to moving data to continuously changing locations in the storage device based on utilization of the device.

In accordance with another aspect of the invention, HOT and COLD data must be moved between various DASD units based upon their utilization factors. That is, data is moved based upon the access frequency of that specific data, as well as the access frequency of the DASD units in the system.

(Christenson, col. 10, lines 55-60) (Emphasis added)

Consistent with Christenson's definition of HOT and COLD data, data movement is based on "access frequency of that specific data." Therefore, a presumption cannot be made that Christensen teaches a predefined HOT region or predefined COLD region. Christenson further states:

For example, a unit may be considered overutilized or underutilized but then may receive certain portions of HOT data or COLD data which may change its status. For example, an underutilized DASD unit which is receiving a large amount of HOT data may become overutilized. Similarly, an overutilized DASD unit which is having HOT data taken therefrom, which is replaced with COLD data, may quickly become underutilized.

(Christenson, col. 10, lines 41-49) (underlining added)

As Christenson clearly states, a DASD unit can have its status changed since HOT data can be replaced with COLD data and vice versa. Thus predefined regions as claimed are not found.

Accordingly, when considered in its entirety Christenson fails to teach each and every element of claim 1 and fails to establish a prima facie anticipation rejection. The rejection should be reversed and claim 1 allowed.

Christenson Col. 6, Lines 45-67 Fails to Teach Claim

Looking to the Final Rejection again, the examiner cites Christenson col. 6, lines 45-67 as teaching hot and cold regions and metering access to a first predefined region and allowing unmetered access to data in a second predefined region (Final OA, page 2, last paragraph). However, col. 6, lines 45-67 does not discuss metering access, does not discuss allowing unmetered access, and does not discuss processing access requests at all. Instead, col. 6, lines 45-67 discuss how the disk drive (DASD) is partitioned and how data on the disk drive (DASD) is moved to hot or cold partitions based on how often the data is utilized. For example, Christenson states:

For the partitioning, the HOT and COLD data are identified and are placed appropriately in the HOT and COLD partitions of the DASD units in the system. New data added to the DASD units is also similarly identified and partitioned. The HOT and COLD data are moved appropriately between DASD units based upon the utilization of those units...

(Christenson, col. 6, lines 53-61)

Therefore, col. 6, lines 45-67 fails to teach or suggest the claimed elements. The cited text fails to support the rejection as does the other portions of Christenson. The rejection is improper for a number of reasons and should be reversed.

Independent claims 25 and 38 recite related features of metered or unmetered access that is dependent upon predefined regions. Thus all rejections are improper and should be reversed.

II. Whether claims 6-7 are unpatentable under 35 USC §103(a) as being anticipated over Christenson and in view of Cousins (US 6,671,772).

Claims 6 and 7 depend from independent claim 1. Thus they patentably distinguish over the references for the same reasons.

Dependent Claim 7

Dependent claim 7 further recites that the first region and the second are defined by one or more logical block addresses. The Final OA cites Christenson col. 13, lines 33-59 as teaching this feature (Final OA, page 8, 4th paragraph). First, the examiner has erred since, as explained under claim 1, Christenson fails to teach or suggest predefined regions within the storage device that are metered or not metered. Thus, Christenson cannot teach or suggest the claimed feature of defining such predefined regions by “one or more logical block addresses.”

Second, the examiner has erred by citing an irrelevant section of Christenson via apparent “key word” searching. The examiner has focused on the term “logical” and has cited Christenson col. 13, lines 33-59. This section discusses a software code entitled “LOGICAL DASD,” which has nothing to do with defining regions. In particular, Christenson states:

Software code, entitled LOGICAL DASD 206 provides the interface between the disk subsystem 200 and the programs 202.

(Christenson col. 13, lines 42-44) (Emphasis in original)

The cited section has no discussion of “logical block addresses” or defining regions with logical block addresses as claimed. Disk drive “addresses” are not discussed anywhere in Christenson and “block addresses” are not discussed.

It appears the examiner simply found the term “logical” and concluded that the element was found with no actual evidence to support the conclusion. Thus, the examiner has made a clear error in fact. The recited elements have not been found and a prima facie anticipation rejection has not been established. The rejection should be reversed.

III. Whether claims 14-19, 28, and 35-37 are unpatentable under 35 USC §103(a) as being obvious over Christenson and in view of Johnson (US 2002/0138670).

This rejection applies to independent claims 14, 28 and 35. Independent claim 14 is representative and will be discussed.

Independent Claim 14

Claim 14 recites a similar element to claim 1, namely, “increasing response time...to a first predefined region...by metering access requests to a second predefined region within the storage device.” Thus for similar reasons as explained under claim 1, Christenson fails to teach or suggest metering access requests based on predefined regions within a storage device. The claimed element has not been found and the rejection is improper.

Claim 14 further recites:

where the metering includes limiting a number of access requests to the second region based in part on a threshold number of the access requests to the second region.

The OA cites Johnson [0020] and [0025] as allegedly teaching these elements (Final OA, page 9, lines 7-9). Appellant respectfully submits that the cited text fails to teach or suggest the claimed elements. Instead, the cited paragraphs discuss allowing low priority I/O requests to process in order to prevent starvation of the low priority requests (Johnson [0020]). The processing is based on job priority and not based on accessing predefined regions within a storage device. There is no discussion of metering based on predefined regions within a storage device as recited in claim 14. There is no discussion of "metering... based in part on a threshold number of access requests to the second region" as recited in claim 14. The examiner admits that only job priority is the determining factor in Johnson since the examiner only refers to high and low "priority requests" in the explanation of Johnson (Final OA, bottom of page 13 to page 14, lines 1-3). Thus the claim is not taught or suggested.

Furthermore, the purpose of starvation prevention is not to limit or meter requests but instead to do the opposite: to process more low priority requests that have been in the queue too long (Johnson [0020] bottom half of paragraph). Thus Johnson teaches an opposite purpose than the limiting feature of claim 14.

Johnson fails to cure the deficiencies of Christenson and their combination still fails to establish a prima facie obviousness rejection for independent claims 14, 28 and 35. Both references process jobs based on job priority. Thus combining them still only teaches processing jobs based on job priority, not disk regions. The claimed elements of "limiting a number of access requests to the second region

based in part on a threshold number of the access requests to the second region” have not been found. The rejection should be reversed.

Dependent Claim 17

Claim 17 depends from claim 14 and recites:

defining a plurality of regions within the storage device; and
assigning a metering threshold for selected regions of the plurality
of regions.

The examiner cites Christenson column 10, lines 14-53 as teaching these features (Final OA, page 10). The examiner provided no rationale or reasoning to support the rejection, which is improper. MPEP 2142, and the Supreme Court, state:

The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval).

The conclusory rejection is improper and cannot be sustained for at least this reason.

Furthermore looking to the cited text, it fails to teach or suggest the claimed elements. Rather, the cited text discusses using a threshold to control data movement of hot and cold data on the DASD disk. Thus it relates to how data is stored on the disk to prevent “thrashing” (col. 10, lines 15-21). The discussion refers to a “utilization threshold” for a “DASD unit”, which is an entire disk. Thus the threshold applies to the entire disk. This is to prevent overutilization or underutilization of a disk unit and does not relate to metering access requests.

There is no discussion of “assigning a metering threshold for selected regions” within a storage device. Therefore, the claimed elements have not been found and a prima facie rejection has not been established.

Independent claims 28 and 35 recite related features of metering access to a predefined region using a threshold. Thus all rejections are improper and should be reversed.

Improper Hindsight

Another clear error is that the examiner has used improper hindsight in attempting to show that Christenson teaches or suggests the claims.

The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or **hindsight reconstruction** to supply deficiencies in its factual basis. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968) (emphases in original).

The examiner's rejection is based on a speculative scenario made by the examiner that is not described by Christenson (Final OA, page 13). The scenario explicitly fails to consider the reference “as a whole” in violation of MPEP 2141.02 as explained above. The examiner has created a rejection by selectively picking sentences from Christenson and ignoring others in an attempt to reconstruct the claims. The claims have been used as a blueprint. Without having the benefit of reading the present claims, one of ordinary skill in the art upon reading Christenson as a whole would not find that it describes the claimed elements. All rejections are improper for this additional reason and should be reversed.

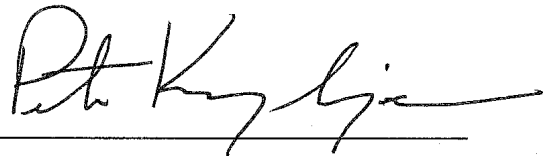
Conclusion

For the reasons set forth above, a prima facie anticipation or obviousness rejection has not been established for any claim. All rejections have been shown to be improper. Appellant respectfully believes that all pending claims 1-12, 14-19, and 25-38 patentably and unobviously distinguish over the references of record and that the rejections should be reversed. Appellant respectfully requests that the Board of Appeals overturn the Examiner's rejections and allow all pending claims. An early allowance of all claims is earnestly solicited.

Respectfully submitted,

Aug. 18, 2010

Date



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8. Claims Appendix

1. A system for a storage device, comprising:
an access controller configured to control access requests to a storage device by metering access to data within a first predefined region within the storage device and by allowing unmetered access to data within a second predefined region within the storage device.
2. The system of claim 1, where the system is embedded in one of, a database system, an operating system, and an application configured to process access requests to the storage device.
3. The system of claim 1, where the system further includes allocation logic configured to determine a priority for data to be written to the storage device and causing the data to be stored within the first region or the second region based on the priority.
4. The system of claim 3 where the priority of the data includes a plurality of priority levels.
5. The system of claim 1 where the storage device includes one or more disk drives.

6. The system of claim 1 where the storage device includes a disk and where the second region is defined closer to a perimeter of the disk than the first region.

7. The system of claim 6 where the first region and the second are defined by one or more logical block addresses.

8. The system of claim 1, where the system is embedded in a file system configured to process data input and output requests to the storage device.

9. The system of claim 1 where the access requests include at least one of data input and data output requests.

10. The system of claim 1, where the access controller is configured to meter access based on a threshold of access requests directed to the data within the first region.

11. The system of claim 1 further including one or more tables configured to define at least the data in the first region to be metered.

12. The system of claim 11 where the data in the one or more tables is configured to define one or more of, a file, an application, and a data location.

13. (Canceled)

14. A method, comprising:

receiving access requests to a storage device; and

increasing response time for access requests to a first predefined region

within the storage device by metering access requests to a second
predefined region within the storage device;

where the metering includes limiting a number of access requests to the
second region based in part on a threshold number of the access
requests to the second region.

15. The method of claim 14 further including storing data to be metered within
the storage device based on a priority level of the data.

16. The method of claim 14 further including determining, for a selected data,
whether the selected data will be stored within the first region or the second region.

17. The method of claim 14 further including:

defining a plurality of regions within the storage device; and

assigning a metering threshold for selected regions of the plurality of

regions.

18. The method of claim 17 where the plurality of regions are defined by setting one or more addresses within the storage device.

19. The method of claim 14 further including:
monitoring a number of access requests to the second region; and
initiating the metering when the number of access requests reaches a
threshold.

20. – 24. (Cancelled)

25. A computer-readable medium storing processor executable instructions operable to perform a method, the method comprising:
processing access requests to a storage device; and
controlling the access requests to the storage device by metering access to data within a first predefined region within the storage device and by allowing unmetered access to data within a second predefined region within the storage device.

26. The computer-readable medium as set forth in claim 25 where the storage device includes a disk drive.

27. The computer-readable medium as set forth in claim 25 further including processor executable instructions operable to cause a processor to store data to the storage device based on a priority of the data, the data being stored in one of the first region and the second region.

28. A computer-readable medium storing processor executable instructions operable to perform a method, the method comprising:

processing access requests to a storage device;

metering access requests to a first predefined region within the storage device to maintain response time for access requests to a second predefined region within the storage device; and

setting a threshold value of access requests, where access requests to the first region are caused to be metered after the threshold value of access requests are processed.

29. The computer-readable medium as set forth in claim 25 where the metering includes limiting a number of the access requests to the first region from being processed.

30. The computer-readable medium as set forth in claim 25 where the processing includes determining to which region each of the access requests is directed.

31. The computer-readable medium as set forth in claim 25 further including processor executable instructions operable to cause a processor to define at least the first region and the second region within the storage device.

32. The computer-readable medium as set forth in claim 25 including means for allocating data to a selected region within the storage device.

33. The computer-readable medium as set forth in claim 25 where the computer-readable medium is integrated with at least one of: a data base system, a file system, an operating system, and the storage device.

34. The computer-readable medium as set forth in claim 25 further including access controller means for metering access requests to the first region.

35. A database system configured to process access requests to a storage device, the system comprising:

allocation logic configured to define a plurality of regions within the storage device based on information received from a user;

threshold logic configured to assign a metering threshold to one or more selected regions of the plurality of regions; and
an access controller configured to process access requests to the storage device, the access controller including logic configured to meter access requests to a selected region of the plurality of regions once a metering threshold for the selected region is met.

36. The database system of claim 35 where the allocation logic is further configured to cause selected data to be placed within a selected region of the plurality of regions based on a frequency of access to the selected data.

37. The database system of claim 35 where the access controller includes means for metering access requests.

38. A computer implemented method, comprising:
receiving access requests to a storage device; and
increasing response time for access requests to a first predefined region within the storage device by providing unmetered access to the first predefined region while metering access requests to a second predefined region within the storage device.

9. Evidence Appendix

None. There is no extrinsic evidence.

10. Related Proceedings Appendix

None. There are no related proceedings.